Redefining Ecosystems

Insights from the Global C-suite Study – The COO perspective

IBM Institute for Business Value

This report draws on input from the 5,247 C-suite executives (CxOs) who participated in our latest C-suite Study – the eighteenth in the ongoing series of CxO studies conducted by the IBM Institute for Business Value. We now have data from more than 28,000 interviews stretching back to 2003.

Here, we focus on the perspectives of Chief Operating Officers (COOs).

Total number of COOs interviewed	**657**
North America	**243**
Central and South America	**69**
Western Europe	**123**
Central and Eastern Europe	**32**
Middle East and Africa	**37**
Asia Pacific	**102**
Japan	**51**

At the heart of the hurricane

Technological advances are overturning the status quo and bringing huge turmoil in their wake. Industries are converging, and new competitors emerging, with breakneck speed. Production techniques are evolving, as the Internet of Things (IoT), 3D printing and other technologies come on stream. And the manufacturing base is shifting, as labor costs, energy availability and the demands on operations change. So how are COOs navigating the hurricane?

In the overarching part of our latest C-suite Study, we interviewed 5,247 top executives to find out what they think the future holds and how they're positioning their organizations to prosper in the "age of disruption."[1] This report delves more deeply into the views of the 657 COOs who contributed to our research – and what the operations gurus of the most successful enterprises do differently.[2]

We identified a small group of COOs with organizations that have both strong reputations as leading innovators and superb financial track records. The Torchbearers, as we call them, comprise 6 percent of all enterprises represented by COOs. We also identified a group of organizations that lag behind the rest. Market Followers have much lower market profiles in the opinions of the COOs who speak for them, and almost all are far less financially successful. They account for 37 percent of our sample.

Comparing the two groups reveals pronounced differences between Torchbearer COOs and Market Follower COOs.[3] Torchbearer COOs are actively redesigning the operating models their organizations use. They're also forming more expansive, innovative ecosystems and boosting their digital acumen.

"What we fear most is disruptive competition: new players who could disintermediate us by developing new business models that provide more value."

COO, Consumer Products, Spain

"Industry convergence will drive the need to differentiate based on brand reputation, quality of service and partner network."

Marco Barioni, COO, Reale Mutua, Italy

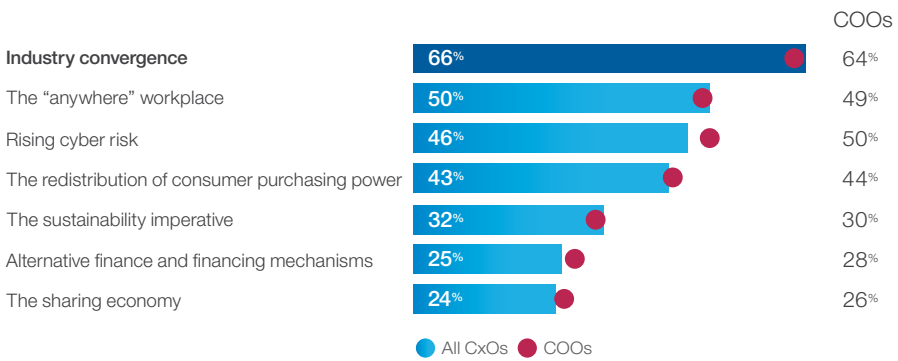
Disruptive trends, dangerous times

COOs everywhere realize the barriers between formerly distinct industries are collapsing, as companies in one sector apply their expertise to others – producing new hybrids and erasing traditional industry classifications in the process. They believe this is the single biggest trend transforming the business arena (see Figure 1).

But COOs – like other CxOs – see industry convergence as a double-edged sword. On the upside, it's creating completely new opportunities for growth by shifting the focus from standalone products and services to cross-sector experiences that meld the digital and physical realms. On the downside, it's exacerbating competition because rival enterprises can seize an organization's core business as they expand into adjacent areas. One company's convergence is another's encroachment.

Figure 1

Blurring boundaries: *COOs say industry convergence is the biggest trend on the horizon*

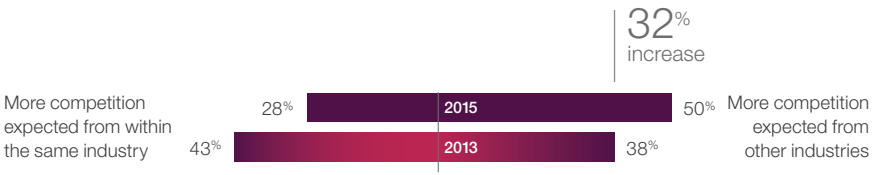


Hence, COOs expect even more competition from new rivals in adjacent industries than they did two years ago, when we completed our last C-suite Study (see Figure 2). "Our competitors aren't just traditional universal banks anymore," the COO of an Asian financial services firm noted. "Telecommunications companies and pawnshops are a threat, for example, because they could venture into the payments business."

Most COOs say fending off these new rivals will entail providing more digitized, personalized offerings. A full 75 percent told us virtual forms of engagement will predominate in the next three to five years, as face-to-face contact continues to dwindle. Similarly, 62 percent anticipate interacting with customers on a more individualized basis.

Figure 2

Hostile force: *COOs are worried about outsiders invading their territory*



"Competitors who, until recently, had no established presence are now quickly moving into our space."

COO, Banking and Financial Markets, United Kingdom

"Ultimately, computing is about networked intelligence, and from this technical perspective the real impact of the Internet and devices will be seen once that translates into automation and machine intelligence."

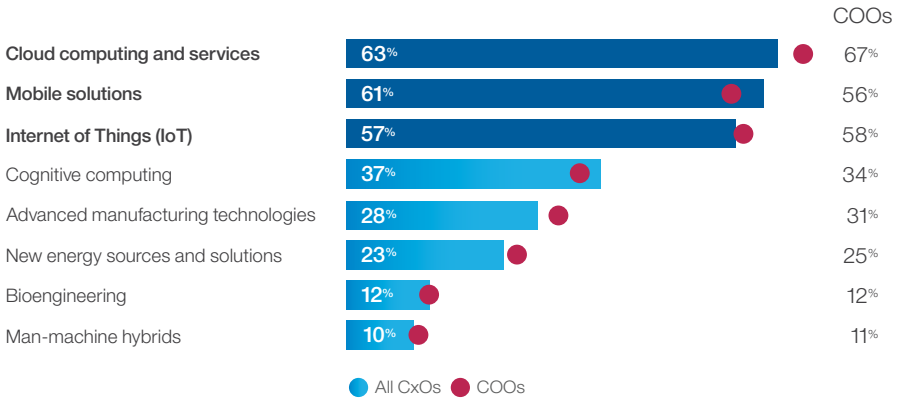
Brian Armstrong, GCCO, Telkom SA, South Africa

So what underpins this change in the competitive landscape? COOs agree with their C-suite colleagues that the disruptive influence of new technologies is one of the root causes. They say cloud computing, the IoT and mobile solutions will have a particularly big bearing on their organizations in the next few years. But they're not ignoring the potential of cognitive computing, robotics and other such advanced manufacturing tools (see Figure 3).

Collectively, these technologies are transforming the way we connect, what we connect and what we do with the connections. They're giving people ubiquitous access to other people and information, linking objects to other objects without human intervention and producing far deeper operational insights. They're also facilitating cheaper, more localized manufacturing and greater responsiveness to customers.

Figure 3

Tech spec: *COOs expect three technologies to have a major impact on their firms*



What to do: Redesign your operating model

COOs are starting at the top as they prepare for the future: 71 percent plan to review the operating models their organizations use, in light of the technological progress they anticipate. Similarly, 68 percent intend to re-evaluate their product/service portfolios. But COOs aren't worrying about where to locate the next warehouse or which new gadget to offer; they're focusing on how to digitize and manage their operations in real time.

Take the consumer products industry, where customers buy many goods on a repeat basis. New technologies will soon enable them to receive a notification when they're running out of a product and pre-order it to pick up later at a store, one U.S. executive explained. "All this information will be tied back to our distribution and production systems so that we know what's selling, where and when, and can streamline our supply chain."

The push to real-time operations applies in other sectors, too. For example, at U.S. motorcycle maker Harley-Davidson's recently renovated plant in York, Pennsylvania, sensors monitor the tiniest manufacturing details and automatically adjust the machinery when they detect that it's drifting away from the prescribed setting. Harley-Davidson also uses the data the sensors generate to find – and eliminate – bottlenecks in production.[4]

Digitizing an organization's operations often entails making major changes, though – and here, Torchbearer COOs lead the way. They're reassessing their operating models and delivery channels more actively than Market Follower COOs. Most are also considering new revenue models (see Figure 4). In other words, they're not just trying to cut costs and make their organizations more efficient; they're equally concerned with pleasing customers. Indeed, some are even assuming responsibility for managing the customer relationship, which was once the marketing and sales functions' sole preserve.

"The 'anchor' for products won't be the physical asset; it will be the digital entity – the product plus all the information associated with it."

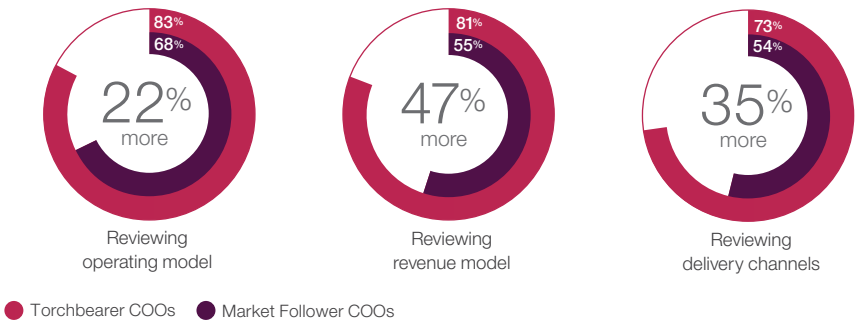
Jesús Marín Rodríguez, COO, Allianz Spa, Italy

"We'll have to project an even more customer-centric, technology-savvy brand in future and reach customers in a more real-time, targeted way."

Michael Bullock, COO, ANZ Bank, New Zealand

Figure 4

Sharp eye: *Torchbearer COOs are reviewing the core parts of their operations more actively*



But Torchbearer COOs excel at managing the bottom line as well. For the past few decades, most companies have concentrated sourcing and production in Asia, Eastern Europe and Latin America on the assumption that it's cheaper than manufacturing in North America, Western Europe or Japan. The majority of Market Follower COOs continue to do so, even though this assumption is increasingly outdated.

Rising wages and transportation costs, productivity gaps and new techniques for extracting energy are all changing the equation. So are the hidden costs of operating an extended global supply chain, such as longer lead times and constraints on the ability to customize offerings for specific market segments. Torchbearer COOs realize as much; when they're deciding where to locate new facilities, they focus on total landed costs (see Figure 5).

That's not all. Nearly three-quarters of Torchbearer COOs are investing in sustainable manufacturing and supply practices, compared with just half of Market Follower COOs. They know it's imperative to protect the planet, but they also understand that a reputation for being a good corporate citizen can be a major competitive advantage. German automaker BMW is renowned for its "green" manufacturing, for example – a fact that enhances its marque.[5]

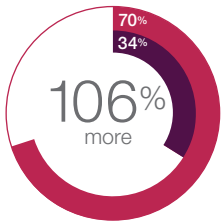
Torchbearer COOs also stand out from the crowd when it comes to using robotics, smart sensors and the IoT to automate their operations. Sixty percent plan to switch to automation-intensive production, and 61 percent plan to put smart sensors in place to capture and communicate operational data, within the next five years. By contrast, only 44 percent of Market Follower COOs intend to take either of these steps.

Aircraft manufacturer Boeing is a good example of a company that operates at the cutting edge of operational innovation. Over the next few years, it plans to invest more than USD 1 billion in automating its assembly plants, with most of the money earmarked for state-of-the-art robots. Meanwhile, other manufacturers are researching ways of identifying and rectifying problems on the fly, via infrared sensing, fast processing and laser projection.[6]

Smart machines and sensors lie at the heart of the drive to digitize operations. "With the Internet of Things, we'll be able to optimize our planning and resource allocation, and use our locomotives and railcars more efficiently," the COO of a German freight company observed. But it's not just physical assets that can be managed more productively. "The intelligence that's built into cars and homes will [also] change how the insurance industry operates," the COO of a Belgian insurance company pointed out.

Figure 5

Homing in: *Torchbearer COOs locate production closer to demand, based on total landed cost*



Determine production and supply locations based on technology, energy and total landed cost, replacing low-cost labor models

Torchbearer COOs Market Follower COOs

"The product lifecycle is becoming shorter, and there's greater potential for disruption than ever before, which means we'll have to make our operating model more flexible."

Bill Muir, COO, Jabil Circuit, United States

How to do it: Innovate your ecosystem

No organization can do everything, though – even with the best operating model. This is why most COOs have either been building nimbler, more innovative ecosystems or plan to do so within the next few years (see Figure 6). They're looking for suppliers, service providers and other partners to help them deliver the compelling experiences customers now expect.

In fact, some firms are going considerably further. They're selling off physical assets and collaborating with other enterprises to access the infrastructure they need. U.S. hospitality companies Hyatt, Marriott, Hilton and Starwood have all adopted "asset-light" models, where they franchise and manage hotels rather than owning the buildings.[7] However, this is a strategy that should be pursued with great care. Higher operating expenses may outweigh the savings on capital investment. There may also be a price to pay in speed and flexibility.

Figure 6

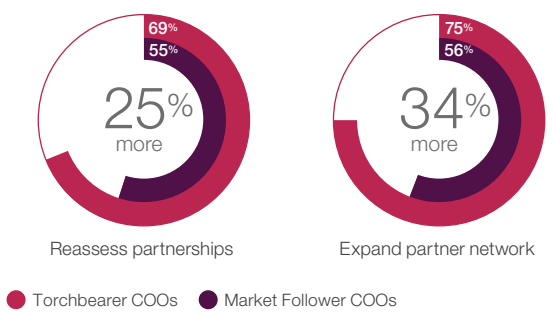
Net benefits: *COOs plan to create more innovative and agile ecosystems*

That said, participating in an ecosystem can help all the members extend their reach and range, and produce more value collectively than they can individually – as Torchbearer COOs clearly appreciate. It's no accident that they're making more effort both to reassess the partnerships they've formed and to expand their existing networks (see Figure 7).

Torchbearer COOs are also more at ease with the decentralized management style ecosystems dictate: 63 percent anticipate more decentralized decision making in the next three to five years, compared with just 42 percent of Market Follower COOs. "A centralized organizational model that limits the power of the local branches will also limit the ability to customize your offerings," the COO of an Italian financial services provider warned.

Figure 7

Allied approach: *Torchbearer COOs are more likely to be reviewing and expanding their partnerships*



"These days, it's essential to build an ecosystem of customers and partners, and innovate continuously."

COO, Electronics, Japan

"We need to get a better understanding of the alliances and partnerships we should form and act faster."

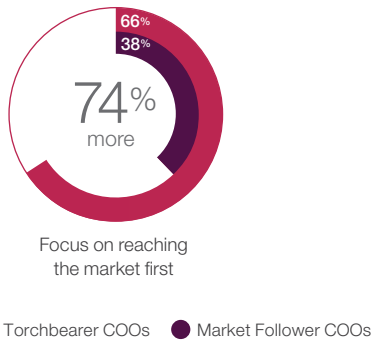
COO, Consumer Products, Brazil

And the whole point of joining forces with other organizations is, of course, to offer better, more customized offerings faster and more efficiently. Managing operations isn't just about making products and matching supply with demand; it's also about adding value by developing superior products, services and processes. Torchbearer COOs are acutely aware of this imperative and far more intent on forming agile, inventive partnerships to help them reach the market first with groundbreaking innovations (see Figure 8).

An example? U.S. white goods manufacturer Whirlpool is collaborating with various enterprises to provide smart home appliances with accompanying services, based on analysis of the data the appliances generate. Whirlpool aims, among other things, to help its customers save energy and water and use their time more efficiently by performing routine household chores without being tethered to their homes.[8]

Figure 8

Lead role: *Torchbearer COOs are putting more effort into creating agile operations to pioneer innovation*



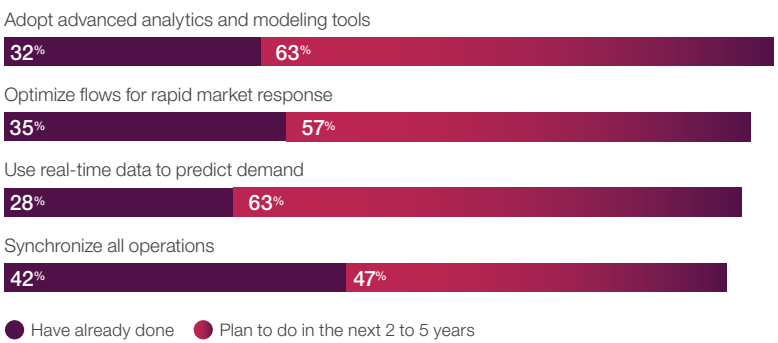
What you need to do it: Boost your digital acumen

Most COOs told us they also plan to use advanced analytics, modeling and real-time data to streamline their own operations (see Figure 9). Relatively few respondents have made much progress yet. But it's high on their agendas because they realize it will let them predict demand and monitor their production schedules more accurately, as well as making their supply chains more transparent. That, in turn, will enable them to cut their processing and inventory-carrying costs and respond more rapidly to changing customer preferences.

Again, Torchbearer COOs are way out in front: 67 percent already use analytics to manage their operations, compared with just 44 percent of Market Follower COOs. Indeed, Torchbearer COOs are 43 percent more likely to use analytics for researching material prices and selecting suppliers, and 47 percent more likely to do so for the purpose of making the end-to-end value chain more visible.

Figure 9

Streamlined ops: *Most COOs plan to use advanced analytics, modeling and real-time data*



"With real-time data, advanced analytics and a single view of the customer, we'll be more agile and able to respond more rapidly."

COO, Banking and Financial Markets, Ireland

"Moving technology closer to the customer will provide better client analytics. This will allow customers to access and receive what they need, resulting in greater revenue."

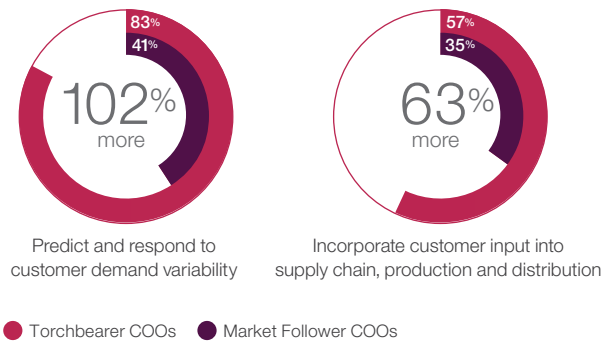
COO, Insurance, South Africa

They command an even bigger lead when it comes to forecasting and responding to variations in demand, and incorporating customer input into their production and distribution processes (see Figure 10). Torchbearer COOs are, quite simply, more switched on to the value of analytics in predicting – and accommodating – customers' desires.

However, combining information technology with industrial automation to optimize output and efficiency takes different skills from those traditionally associated with manufacturing and distribution. Data analysts, modeling and simulation experts, technicians who can maintain highly automated equipment and processes, regulatory affairs and safety professionals, digitally enabled logistics and transportation specialists: they all play a major role. So investing in the right technologies is only part of the solution; the other part is developing the talent required to use those technologies effectively.

Figure 10

Client-conscious: *Torchbearer COOs are far better at using analytics to respond to customers' needs and desires*

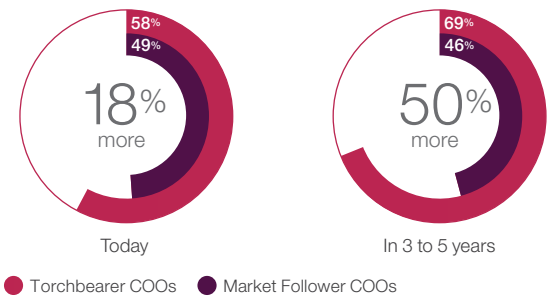


Two-thirds of the COOs in our study understand this. They know they'll either have to hire people with the relevant qualifications or train existing employees. But as other research by the IBM Institute for Business Value shows, there's a huge gulf between awareness and action. Most operations executives conceded that talent shortages were one of the biggest impediments to their plans for going digital. Yet only 17 percent had recruited new staff, only 27 percent had created new leadership roles and only 36 percent had invested in training the workforce.[9]

Torchbearer COOs take a more hands-on approach to talent management. They spend more time acquiring and developing talent. And they plan to become even more deeply involved in nurturing new skills over the next few years, in sharp contrast with Market Follower COOs (see Figure 11).

Figure 11

Skills agenda: *Torchbearer COOs take a more hands-on approach to nurturing talent*



"We need to improve our recruitment processes and remuneration policies, and re-skill our existing employees. People are an organization's crown jewels."

COO, Energy and Utilities, India

Seize the torch

COOs know they need to prepare for a future in which disruption is pervasive: a future in which technological advances are increasingly blurring the distinctions between different industries, new competitors are emerging from “left field” and customers are becoming ever more demanding. So how can they redefine the ecosystems in which their organizations participate and make their operations more efficient? The Torchbearer COOs in our study provide lessons from which COOs everywhere can profit.

What to do: Redesign your operating model
Align your digital operations strategy with your organization’s business objectives. Capitalize on advances in robotics and the IoT to automate your manufacturing and preventative maintenance, and investigate the potential of emerging technologies like 3D printing. Identify the best sites for production and assembly based on total landed costs, bearing in mind the impact on your organization’s agility and customer responsiveness. Optimize your digital operations sustainably. And explore the opportunities for crossing over into other industries.

How to do it: Innovate your ecosystem
Focus on building a bigger, more innovative ecosystem. Look for organizations that can help you customize your product/service portfolio and develop new offerings, or those with specific expertise that can help you make your global operations more agile. Examine the pros and cons of using an asset-light versus an asset-heavy approach. And adopt a decentralized management style; you can only reap the benefits of getting real-time operational insights by delegating decisions to the people on the ground.

What you need to do it: Boost your digital acumen

Use analytics and modeling to make sense of the "big data" generated by machine-to-machine connections and smart sensors, predict demand and optimize your operations. The value of the IoT lies as much in the insights it unlocks as it does in the opportunity to create intelligent products and services. Get personally involved in training existing employees and hiring additional employees to manage this tidal wave of data. And move fast because people with the requisite skills will be in short supply, as the next wave comes ever closer.

You can find "Redefining Boundaries," the first part of our latest Global C-suite Study, at ibm.com/csuitestudy, or via the IBV tablet apps on iOS and Android.

For more information

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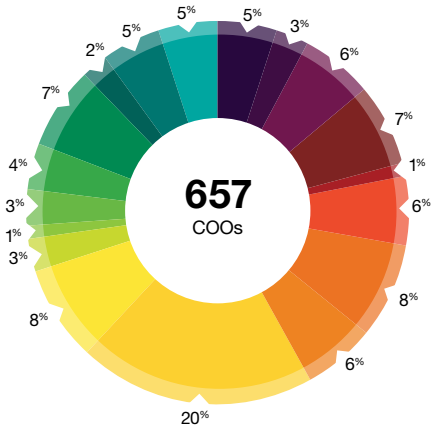
Figure 12

Sector spread: *We spoke with COOs from 18 industries*



How we conducted our research

In 2015, we surveyed 5,247 business leaders in more than 70 countries for our latest Global C-suite Study, the eighteenth IBM study to focus on the C-suite. This report focuses on the responses of the 657 COOs who participated in our research (see Figure 12).

We used a two-dimensional rake weighting process to correct for oversampling issues arising from differences in the number of respondents in a given role or region. Our research also included an analysis of the traits that distinguish the most successful enterprises. We asked each COO to rank his or her organization's position in the industry in which it operates on two dimensions: market perception of its innovativeness; and financial performance over the past three years, measured in terms of revenue growth and profitability (or budget growth and efficiency for enterprises in the public sector). We cross-validated the responses to our second criterion by comparing them with two objective financial measures – compound annual growth in revenue and profit before taxes between 2009 and 2014.

Notes and sources

1 "Redefining Boundaries: The Global C-suite Study." IBM Institute for Business Value. November 2015. www.ibm.com/csuitestudy

2 We have chosen to focus on COOs rather than Chief Supply Chain Officers (as we did in our previous C-suite study) because the title "Chief Operating Officer" more accurately reflects the full scope of activities covered by many senior operations executives. While some are only responsible for manufacturing and the supply chain, a growing number also manage service delivery and related functions such as sales and IT.

3 For ease of reading, we have referred to COOs in enterprises that are Torchbearers as Torchbearer COOs, and to COOs in enterprises that are Market Followers as Market Follower COOs.

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